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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,964	12/11/2003	Masayuki Shinkai	800_119	9252
25191	7590	05/23/2006	EXAMINER	
BURR & BROWN PO BOX 7068 SYRACUSE, NY 13261-7068			EDMONDSON, LYNNE RENEE	
			ART UNIT	PAPER NUMBER

1725

DATE MAILED: 05/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/732,964

Applicant(s)

SHINKAI ET AL.

Examiner

Lynne Edmondson

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 1-17 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-23 and 25-30 is/are allowed.
- 6) ☒ Claim(s) 24 and 31-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's arguments regarding rejoining of the method claims is persuasive. Claims 18-23 and 25-30 will be examined with the previously elected method claims 24 and 31-33.
2. Claims 1-17 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 10/25/05.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 24 and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuno (USPN 4901904).

Tsuno teaches a method of bonding a ceramic base to a metal member via Au solder (col 4 lines 8-13) comprising the steps of disposing a bonding surface comprising an active metal layer (Ti, Zr, Hf) , a solder layer (Au) and a barrier layer (Cr) and

heating and melting the solder at temperatures between 850 C and 1300 C (Table 1) to bond the members (col 2 line 26 – col 3 line 8).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 24 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over DiGiacomo et al. (USPN 5367195).

DiGiacomo teaches a method of bonding a ceramic base to a metal member (pin) via Au solder (col 2 lines 24-32, col 6 lines 24-28 and col 7 lines 22-30) comprising the steps of disposing a bonding surface comprising an active metal layer (Ti), a solder layer (Au) and a barrier layer (Cr) and heating and melting the solder to bond the members (col 4 line 27 – col 5 line 61 and col 6 line 57 – col 7 line 30). The barrier comprises Cr (col 8 lines 18-26). However the bonding temperature is not disclosed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to heat the solder above its melting temperature to form the bond. As Au melts at about 1064 C, a melting temperature of 1070 C would be the minimal temperature required for effective reflow.

***Response to Arguments***

7. Applicant's arguments with respect to claims 24 and 31-33 have been considered but are moot in view of the new ground(s) of rejection.

***Allowable Subject Matter***

8. Claims 18-23 and 25-30 are allowed.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Arnold et al. (USPN 4835593), Shinkai et al. (USPN 6881499 B2), Kurata (USPN 5854087), Cadden et al.(USPN 6315188 B1), Tower et al. (USPN 6145731), Gabriel (USPN 5113052) and Lawler et al. (USPN 4772935).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson  
Primary Examiner  
Art Unit 1725

*LRE*  
*5/24/16*

LRE